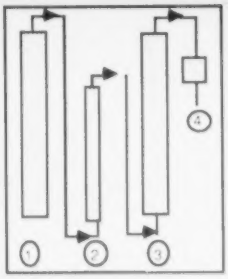
RubberWorld

The technical service magazine for the rubber industry Volume 202, No. 5 August 1990

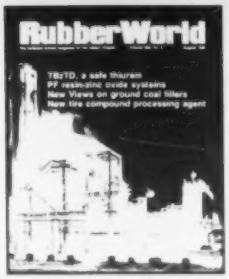
TBzTD, a safe thiuram
PF resin-zinc oxide systems
New views on ground coal fillers
New tire compound processing agent

Contents

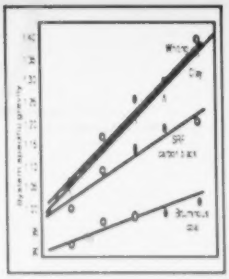
August 1990



Safe thiuram p. 18


RubberWorld
TBzTD, a safe thiuram
PF resin-zinc oxide systems
New Views on ground coal fillers
New tire compound processing agent

Vol. 202, No. 5



Ground coal fillers p. 22

6 Business Briefs
Acquisitions, expansions; contracts, licenses; corporate, financial news; markets, news.

14 Tech Service: Cleaning up
by Jon Menough, contributing technical service editor. This column reviews the use of plastic media for rubber mold cleaning.

16 Patent News
edited by Bob Samples, Akron Rubber Development.

18 A new safe thiuram, TBzTD
by D.B. Seeberger, Akzo Chemicals. Tetrabenzyl thiuram disulphide, TBzTD, has been developed by Akzo, and is said to be the first safe thiuram that may be able to replace one or more of the currently used thiurams in the rubber industry.

22 New views on using ground coal fillers
by Michael J. Trojan, Keystone Filler and Mfg. Co. and William Klingensmith, Akron Consulting Co. The authors discuss the concept of decreased compound specific gravity, comparing ground coal to other common fillers, to reduce weight and to improve performance parameters in rubber compounds.

27 The effect of PF resin-zinc oxide system as curative for soft thermoplastic NR:PP blends
by Joy Jacob, N.M. Mathew and B. Kuriakose, Rubber Research Institute of India. This article is a study on the use of a phenol-formaldehyde resin/zinc oxide system as a curative for thermoplastic elastomers prepared from a 60/40 NR/PP blend.

33 New processing agent in tire compounds
by S.W. Hong, Uniroyal Chemical Co. In this article, Processing Agent 1109 has been introduced in lower oil tread, replacing oil with PA 1109, conventional tread and high modulus tread compounds.

70 Techno Mart
New equipment, instruments, products and materials

Departments

4	Editorial	69	Calendar	75	Literature
64	Meetings	73	Jobs & People	76	Ad Index

Cover photo courtesy of Zeon Chemicals Inc.

A Lippincott & Peto Publication

Editorial

To say that the chemical industry has an image problem would be an understatement. Hardly a day goes by without one form of the media telling you about spills, explosions, illegal dumping, past dumping, etc. In many of the instances there appears to be a blatant disregard by the company involved for the health, safety or environment of their workers, customers and the community they operate in. Unfortunately, a whole industry gets tainted by the transgressions of a few.

The Chemical Manufacturers Association, recognizing this problem of how members are preceived, has developed what it calls Responsible Care - a public commitment. By being a member of the CMA, companies now are committed to support a continuing effort to improve industry's responsible management of chemicals. Members pledge to the following:

- To recognize and respond to community concerns about chemicals and our problems.
- To develop and produce chemicals that can be manufactured, transported, used and disposed safely.
- To make health, safety and environmental considerations a priority in our planning for all existing and new products and processes.
- To report promptly to officials, employees, customers and the public, information on chemical-related health or environmental hazards and to recommend protective measures.
- To counsel customers on the safe use, transportation and disposal of chemical products.
- To operate our plants and facilities in a manner that protects the environment and the health and safety of our employees and the public.
- To extend knowledge by conducting or supporting research on the health, safety and environmental effects of our products, processes and waste materials.
- To work with others to resolve problems created by past handling and disposal of hazardous substances.
- To participate with government and others in creating responsible laws, regulation and standards to safeguard the community, workplace and environment.
- To promote the principles and practices of Responsible Care by sharing experiences and offering assistance to others who produce, handle, use, transport or dispose of chemicals.

Many a cynic will shout lip service on this. Like the quality issue, unless management is totally committed, it is nothing but lip service. But these principles are a good starting point, and are principles that can be adopted by any industry.

Don R. Smith
Editor

RubberWorld

EDITORIAL STAFF

Don R. Smith, editor
Dr. Walter C. Warner, technical editor
Jill Wrigley, managing editor
Julie Wagner, associate editor
Deanne Dodd, composition editor
Jon Menough, contributing technical service editor

BUSINESS STAFF

Job Lippincott, publisher
John W. Peto, v.p. sales
Dennis Kennelly, sales representative
Barbara Gordon, adv. production manager
Sally Dowling, assistant adv. production manager

EDITORIAL OFFICES

P.O. Box 5485
1867 W. Market Street
Akron, Ohio 44313
(216) 864-2122
Telex: 297690 RWMAG UR

OTHER LIPPINCOTT & PETO PUBLICATIONS

- Product News
- Automotive Polymers & Design
- Blue Book: Materials, Compounding Ingredients, and Machinery for Rubber

RUBBER WORLD, ISSN-0035-9572, August 1990 Vol. 202, No.5.

Copyright: Lippincott & Peto, Inc. 1990; all rights reserved.

J.H. Lippincott, John W. Peto, owners. Published monthly with two special issues in the Spring and Fall at 1867 West Market St., Akron, OH 44313 by Lippincott & Peto, Inc. Editorial and Executive Offices at 1867 West Market St., Akron, OH 44313. Second-Class postage paid at Akron, OH and at additional mailing offices. Postmaster: please send changes of address to RUBBER WORLD, Circulation Dept., P.O. Box 302, CromPond, NY 10517. Subscription Rates: United States, 1 year $28; Canada, $33; Foreign, $44 in U.S. currency by U.S. bank draft or international money order. Single copies $3.00. August 1990.

All rights reserved

Business Briefs

Acquisitions, expansions

Witco will expand sulfonate capacity at its Amsterdam facility in the Netherlands to include neutral and overbased calcium sulfonate production, and has completed an expansion of sulfonation facilities in Elbeuf, France to manufacture sulfonic acids.

Zeon Chemicals USA broke ground for a $7 million U.S. research and development/technical services center in Louisville, KY. The center will cover 36,000 square feet in two buildings, adjacent to the existing headquarters and manufacturing plant.

Exxon Chemical Polymers will construct a plant to produce structural thermoplastic composite materials at Lynchburg, VA. The plant is designed for expansion in line with projected sales growth. The first 15 million lbs./year increment is scheduled for start-up in the first quarter of 1991. Construction will begin immediately following receipt of necessary environmental permits.

Arco Chemical broke ground for a propylene oxide and styrene monomer plant in Channelview, TX. Field construction has begun, with plant startup scheduled for the fourth quarter of 1991. Upon completion, the plant will produce 500 million pounds of propylene oxide, and 1.125 million pounds of styrene monomer annually.

Kline & Company, Fairfield, NJ, opened a full-service business consulting office in Yokohama, Japan, with a full-time staff of consultants, to offer a full range of business consulting and research services in the chemical and allied process industries. The company will continue its affiliation with **Diamond, Inc.** and will maintain its office in Diamond's Tokyo headquarters.

Bridgestone formed **Bridgestone/Firestone Europe S.A.** for the overall planning and management of the operations of both Bridgestone and Firestone in Europe. The company is fully capitalized by Bridgestone at 18 million Belgian Francs (about $510,000).

The **Society for the Advancement of Material and Process Engineering** moved its international business office to a larger, 14,000 square foot, two story building in Covina, CA.

DSM Resins reached an agreement to acquire the **ERF Plastics Ltd.** subsidiary of **ERF plc** (UK). ERF Plastics produces glass fiber reinforced molded parts and assembly components for the automotive transport industries, with outlets in the UK and abroad.

SilMix, Stow, OH added refining, straining, pelletizing, preforming and metal-insert recovery to its services. The expanded services are available on an independent basis as well.

Ometron relocated to larger headquarters in Sterling, VA, where it will continue to manufacture non-contact

Serving your industrial needs for 113 years — Akron Paint & Varnish Inc.

APV

Off-site Cement House Operations can...

- help eliminate EPA and OSHA concerns
- assure product quality
- save your company money
- develop new products
- handle all of your cement house needs

For more information, write for our free brochure. **Send your business card to: Akron Paint & Varnish Inc., 1390 Firestone Parkway, Akron, Ohio 44301.** ***Or call 1-800-772-3452***

Circle 4 on card

RMA tire report - April
(figures in thousands of units)

Passenger tires	YTD '90	YTD '89	% change
Shipments			
original equipment	15,718	19,097	-17.7
radial	13,796	16,675	-17.3
replacement	47,648	46,631	2.2
radial	45,999	44,117	4.3
export	4,456	4,511	-1.2
radial	4,239	4,163	1.8
total	67,822	70,240	-3.4
radial	64,034	64,954	-1.4
Production	60,697	62,255	-2.5
radial	58,297	57,792	0.9
Truck & bus tires			
Shipments			
original equipment	2,486	3,075	-19.2
radial	2,130	2,538	-16.1
replacement	11,378	11,061	2.9
radial	7,073	6,308	12.1
export	1,247	1,243	0.3
radial	1,000	940	6.4
total	15,110	15,379	-1.7
radial	10,203	9,786	4.3
Production	12,897	13,686	-5.8
radial	9,154	8,929	2.5

290 president James Patisteas that URW workers have been used as a sacrificial lamb to impress stockholders," Stone said. Goodyear decided to close the plant for economic reasons, following discussions between Goodyear corporate and plant officials and local and international URW representatives. The plant's age and market conditions, such as over capacity of roofing products, were said to be key factors which lead to the closing.

• The world's total natural rubber production for 1989 is estimated at 5.054 million metric tons compared with 5.040 mmt for the previous year, an increase of only 14,000 mmt or around 0.3 percent, according to the Malaysian Rubber Research and Development Board. Output from Malaysia and Sri Lanka declined by 14% and 6.1% respectively. Indonesia, Thailand, India and "rest of world" increased production by 2.4%, 4.1%, 9.9% and 21.3% respectively.

Demand for rubber remained strong during the first nine months of 1989, although the year-on-year increase in demand was slightly less than that registered during the same period in 1988. The strongest increase during the nine-month period was recorded for France, at 14.5%, followed by the U.S. (6.7%), China (6.6%), and India (6.5%).

World rubber consumption for the third quarter of 1989, 3.775 million metric tons, was 3.4% above that of the third quarter of 1988. Strong demand was noted in the U.S., France, the U.K., West Germany and China.

Demand for NR during January to September 1989 was better than for SR, rising 4.9% above the level a year before to 3.995 million metric tons. Strong increases were registered for West Germany, the U.S. and China; Japan, South Korea and the U.K., however, reduced uptake by 3.1%, 5.6% and 13.7% respectively. During this period, the ranking of the top five NR consuming countries remained almost unchanged from the first half of the year, with the U.S. as the largest consumer, followed by Japan, China, India and South Korea; West Germany was the fifth largest in the first half of the year, according to the MRRDB.

• For the fourth year in a row, unemployment among chemists has hovered close to the 1% mark, while their median salaries rose about 5% in step with inflation, according to the annual salary survey in *Chemical & Engineering News*, the American Chemical Society weekly magazine.

The four-year streak is the longest since ACS began collecting such data in 1971, the survey notes. The chemists' 1.1% unemployment rate as of March 1 is far below the 5.2% rate for the U.S. civilian labor force as a whole, and even below the 1.8% rate for all managerial and professional employees.

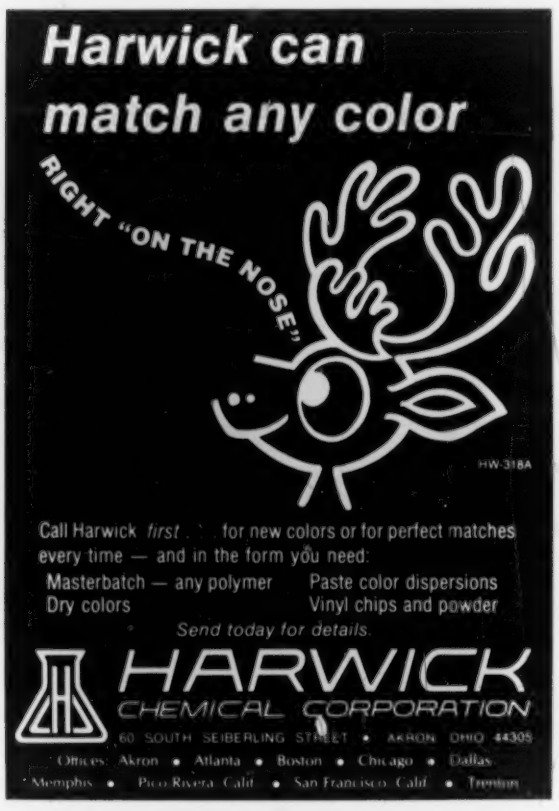
The median base salary for chemists at all degree levels as of March 1 was 5% higher than a year earlier, continuing the same moderate trend of recent years, the survey says. This trend has done little more than keep pace with the rise in consumer prices, it notes.

World rubber consumption, third quarter 1989

	NR & SR		NR	
	'000 tonnes	% chg[a]	'000 tonnes	% chg[a]
USA	725.2	+4.8	228.1	+15.5
UK	92.5	+9.5	31.0	-11.4
France	125.6	+23.3	40.2	-2.0
West Germany	163.7	+5.8	52.1	+13.3
Italy	n/a	--	32.0	+18.5
Other W. Europe	199.0	+3.6	75.0	+4.2
Eastern Europe	832.0	-4.4	82.0	-13.7
India	106.8	+2.7	83.7	+8.7
Japan	428.6	+3.0	156.0	+1.0
China	231.0	+6.2	155.0	+5.1
South Korea	121.5	-16.7	59.2	+9.2
Asia[b]	258.5	+12.8	168.3	+8.0
Latin America[c]	119.5	+8.6	46.5	+9.4
Africa	58.0	+5.5	29.0	+3.6
All others	n/a	--	56.9	-0.4
World Total	3,775.0	+3.4	1,295.0	+5.3

a - % change from corresponding quarter 1988
b - excluding Japan, China, India and South Korea
c - excluding Brazil

Source: MRRDB


Harwick can match any color
RIGHT "ON THE NOSE"
HW-318A
Call Harwick first . . . for new colors or for perfect matches every time — and in the form you need:
Masterbatch — any polymer
Dry colors
Paste color dispersions
Vinyl chips and powder
Send today for details.
HARWICK
CHEMICAL CORPORATION
60 SOUTH SEIBERLING STREET • AKRON, OHIO 44305
Offices: Akron • Atlanta • Boston • Chicago • Dallas
Memphis • Pico Rivera, Calif. • San Francisco, Calif. • Trenton

Circle 8 on card